

Claims

1. A device for providing tunable high-frequency and/or radio-frequency comprising within one IC-package at least four signal paths providing at least 5 two input and at least two output ports at least one active component and at least one variable passive component connected at least with an input port of the active component, and at least one control path for controllable tuning the at least one variable passive component.
- 10 2. The device of Claim 1, further comprising at least two variable passive components, each of which is individually controllable by the at least one control path and/or wherein the active component is a transistor element, in particular based on silicon or field effect technology, and/or wherein at least one passive component is a variable capacitor.
- 15 3. The device of Claim 1, wherein the at least one control path is isolated from the signal path into which the at least one variable component is connected and/or wherein a separate control path for each variable component is comprised and/or wherein the at least one control path is controllable via an analogue signal and/or via a digital to analogue converter.
- 20 4. The device of Claim 1, wherein each passive component comprises an actuator for driving a variable element of the component to vary an effective area thereof, in particular by changing the degree of engagement of fingers of a comblike structure or by changing the distance between at least two plates.
- 25 5. The device of Claim 1, wherein a variable component respectively comprises an actuating mechanism based on an electrostatic, piezoelectric, thermal, magnetic or bi-metallic actuator functionality.

6. The device of **Claim 1**, wherein produced by using a Micro-Electro-Mechanical-Systems (MEMS) technology, in particular produced by employing a bulk micromachining and/or a surface micromachining technology and/or wherein the variable component is produced as MEMS varactor (C<sub>1</sub>, C<sub>2</sub>).

5

7. The device of **Claim 1**, further characterized by a resonance circuit coupled to the at least one tunable passive component in parallel.

10

8. The device of **Claim 1**, wherein the resonance circuit comprises a LC-resonance circuit, a ceramic quarter wavelength resonator, a crystal SAW-device and/or a MEMS-based LC combination.